GIULIO STANCARI, PH.D.

Scientist
Accelerator Physics Center, Experimental Beam Physics Department

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RESEARCH EXPERIENCE

Scientist I ***2011–present***
Fermi National Accelerator Laboratory, Batavia, IL
- explored electron lens options for nonlinear integrable optics in the IOTA ring at the Fermilab ASTA facility
- studied the physics of transverse beam diffusion and halo dynamics in hadron storage rings and colliders
- investigated applicability of hollow electron beam collimation to SPS and LHC machines at CERN
- managed and maintained electron-lens test stand laboratory

Associate Scientist ***2009–2011***
Fermi National Accelerator Laboratory, Batavia, IL
- demonstrated collimation with hollow electron beams in the Tevatron
- studied beam-beam compensation with Gaussian electron lenses
- measured transverse beam diffusion with collimator scans
- maintained electron-lens test stand laboratory
- measured transverse coherent beam-beam modes
- investigated space-charge compensation with trapped electron plasma columns

Research Assistant Professor ***2008–2009***
Idaho State University, Pocatello, ID
Thomas Jefferson National Accelerator Facility, Newport News, VA
- designed positron source for the Idaho Accelerator Center and for CEBAF
- taught Accelerator Physics to graduate students and advanced undergraduates

Staff Physicist ***2005–present (on leave)***
INFN (Istituto Nazionale di Fisica Nucleare), Ferrara, Italy
- achieved laser trapping of radioactive francium atoms for atomic parity violation
- characterized production target for radioactive beams of francium, including diffusion and surface desorption
- devised new complementary-scan method for highest-precision measurements of narrow charmonium resonances in antiproton-proton annihilations

- investigated feasibility of a compact recirculating-beam ion source
- studied beam lifetime limitations at the COSY cooler synchrotron (Jülich, Germany) for (anti)proton polarization studies
- built scintillating-fiber beam profiler for crystal channeling experiments

Post-doctoral Researcher ***2001–2005***
INFN Laboratori Nazionali di Legnaro, Italy
Università di Ferrara, Italy
INFM (Istituto Nazionale di Fisica della Materia), Siena, Italy

- designed, built and commissioned electrostatic beamline for transport of radioactive francium beams from the production target to a magneto-optical trap
- designed francium ion source and extraction optics

Research Associate ***1998–2000***
Fermi National Accelerator Laboratory, Batavia, IL

- designed and developed dynamic lattice with variable momentum compaction for the Antiproton Accumulator, necessary for running charmonium experiment E835
- oversaw deceleration group during E835 operations
- performed decelerations and energy changes during E835 run
- contributed to the commissioning of the Antiproton Source and lattice upgrade for Run II
- improved and maintained controls software
- wrote closed-orbit software for beam-position monitors
- measured electromagnetic form factor of the proton at large timelike momentum transfers in antiproton-proton annihilations
- provided accurate antiproton beam energy profiles for precision measurements of charmonium resonance parameters

Research Assistant ***1996–1997***
Università di Ferrara, Italy

- built first scintillating-fiber tracker with VLPC readout
- evaluated tracking performance of the detector
- participated in E835 data-taking run at Fermilab

Exchange Scholar ***summers of 1994 and 1995***
Fermi National Accelerator Laboratory, Batavia, IL

- prepared and characterized fibers for scintillating-fiber detector
- simulated $p\bar{p} \to \phi\phi \to 4K$ trigger rate in antiproton-proton annihilations for charmonium studies

EDUCATION

Ph.D. in Physics, Università di Ferrara, Italy, January 1999: "Measurements of the magnetic form factor of the proton at large timelike momentum transfers," FERMILAB-THESIS-1998-28. Advisors: Prof. R. Calabrese and Prof. D. Bettoni.

B.Sc. and M.Sc. in Physics, *summa cum laude*, Università di Ferrara, Italy, July 1995: "Studio dei decadimenti del mesone ψ'" ("Study of the decays of the ψ' meson"). Advisor: Prof. D. Bettoni.

PHYSICS COMMUNITY SERVICE

Reviewer for the Review of Scientific Instruments, European Physical Journal, and Physics Procedia.

Session chair at the Workshop on Opportunities for Polarized Physics at Fermilab, May 2013.

Member of the Ph.D. Qualifying Exam Committee at Idaho State University, 2009.

Member of the Selection Committee for High-School Interns at Idaho State University, 2009.

Member of the Selection Committee for REU students (Research Experiences for Undergraduates) at Idaho State University, 2009.

Scientific Organizer of Seminars, Department of Physics and INFN, Ferrara, Italy, 2005–2008.

Member of the Scientific Committee for the exhibit "Radioattività, una faccia della natura," ("Radioactivity: A Facet of Nature"), Ferrara, Italy, April–May 2005.

Organizer of an Open House at the Department of Physics, Ferrara, Italy, May 2002.

TEACHING AND MENTORING

Master thesis co-supervisor for Vince Moens (École Polytechnique Fédérale de Lausanne, Switzerland), with Prof. Leonid Rivkin (EPFL, Switzerland) and Dr. Stefano Redaelli (CERN): "Experimental and numerical studies on the proposed application of hollow electron beam collimation for the LHC at CERN," FERMILAB-MASTERS-2013-02, February–September 2013.

Supervised Jin-Seok Kim, Young-Hyun Cho, and Boo Seung Yang from Prof. Hae June Lee's group at Pusan National University, Korea: "Simulation of hollow electron beams for controlled halo collimation," January–February 2013.

Served as mentor for the Lee Teng Undergraduate Fellowship in Accelerator Science and Engineering (summer 2012). Student: Siqi Li (University of Chicago).

Supervised Valentina Previtali, a Fermilab Toohig Fellow and a Fermilab Guest Scientist working on hollow electron beam collimation, August 2011 – July 2013.

Developed new curriculum in Accelerator Physics (PHYS 499 / PHYS 630) for advanced undergraduates and for graduate students at Idaho State University, Spring 2009.

Taught Accelerator Physics to undergraduates at Università di Ferrara, Italy, 2007–2008.

Taught Electromagnetism and Optics problem sessions to undergraduates at Università di Ferrara, Italy, 2001–2007.

Served as advisor for several B.Sc. theses in particle and accelerator physics.

Obtained Math and Physics teaching credentials for Italian high schools.

Delivered several invited lectures to high-school students and teachers.

PROFESSIONAL DEVELOPMENT

Advanced Course on Vacuum Technology, INFN-LASA, Milan, Italy, 7–10 November 2005.

CERN Accelerator School, Intermediate Level, DESY Zeuthen, Germany, 15–26 September 2003.

The Laboratory: A Tool of the Trade, Summer School of the Italian Association for Physics Teaching (AIF), L'Aquila, Italy, 29 July – 3 August 2002.

Selected Topics in Accelerator Technology, Cornell and Fermilab, Fall 2000.

Workshop on Confidence Limits, Fermilab, Batavia, IL, 27–28 March 2000.

Accelerator School 1999, Fermilab, Batavia, IL, 2–13 August 1999.

Practical Statistics for Particle Physicists, Fermilab, Batavia, IL, June 1999.

Microwave Measurements, Fermilab, Batavia, IL, March–April 1999.

An Incomplete Education in Accelerator Technology, Fermilab 1998 Summer Class, Batavia, IL, 3–14 August, 1998.

U.S. Particle Accelerator School, Austin, TX, 19–30 January 1998.

IX National Seminars on Nuclear and Subnuclear Physics, Otranto, Italy, 23–28 September 1996.

SKILLS

General and scientific computing: UNIX/Linux, Mac OS, DOS/Windows, FORTRAN, C, Python, HTML/CSS, tcsh/bash, GUIs, LaTeX, CERN Libraries, Numerical Recipes, R, Fermilab accelerator controls (console applications, ACL scripts), MAD, Trace 3D, PBO Lab, Simion 3D, Warp.

Hardware experience: instrumentation, electronics, vacuum technology.

DAQ systems: CAMAC/VME, DSP, LabVIEW, Fermilab ACNET.

Languages: Italian (native), English (fluent), French and Spanish (basic).

PROFESSIONAL ORGANIZATIONS

Member of the Society for Industrial and Applied Mathematics since 2013.

Member of IEEE since 2010.

Member of the American Physical Society since 2009.

Member of the American Association of Physics Teachers since 2003.

AWARDS AND HONORS

Exceptional Performance Recognition Award, Fermilab, 2011.

Employee Reward and Recognition, Fermilab Accelerator Physics Center, 2010.

Best Poster Award, CERN Accelerator School, 2003.

"Francesco Viviani" award for excellence in high-school performance, 1990.

COLLABORATIONS

Pusan National University, Korea

CERN, Geneva, Switzerland

University of California, San Diego

Jefferson Lab, USA

Forschungszentrum Jülich, Germany

INFN Laboratori Nazionali di Legnaro, Italy

PUBLICATIONS IN PEER-REVIEWED JOURNALS

1. M. Ambrogiani et al.,
"Construction and performance of a cylindrical scintillating fiber detector for experiment 835 at FNAL,"
IEEE Trans. Nucl. Sci. **44**, 460–463 (1997).

2. M. Ambrogiani et al.,
"The E835 scintillating fiber detector,"
Nucl. Phys. B (Proc. Suppl.) **61**, 384–389 (1998).

3. M. Ambrogiani et al.,
"Results from the E835 scintillating fiber detector,"
Nucl. Instrum. Methods A **419**, 632–636 (1998).

4. M. Ambrogiani et al.,
"The Fermilab E835 scintillating fiber detector,"
Nucl. Phys. B (Proc. Suppl.) **78**, 479–483 (1999).

5. M. Ambrogiani et al. (E835 Collaboration),
"Measurements of the magnetic form factor of the proton in the timelike region at large momentum transfer,"
Phys. Rev. D **60**, 032002 (1999).

6. M. Ambrogiani et al. (E835 Collaboration),
"Study of the $\chi_{c0}(1^3P_0)$ state of charmonium formed in $\bar{p}p$ annihilations,"
Phys. Rev. Lett. **83**, 2902–2905 (1999).

7. M. Stancari et al. (E835 Collaboration),
"Two photon decay widths of charmonium resonances,"
Nucl. Phys. B (Proc. Suppl.) **82**, 306–310 (2000).

8. W. Baldini et al.,
"The charged trigger of experiment E835 at Fermilab,"
Nucl. Instrum. Methods A **449**, 331–343 (2000).

9. M. Ambrogiani et al. (E835 Collaboration),
"Study of the $\gamma\gamma$ decays of the χ_2 and χ_0 charmonium resonances,"
Phys. Rev. D **62**, 052002 (2000).

10. M. Ambrogiani et al. (E835 Collaboration),
"Measurement of the branching ratios $\psi' \to e^+e^-$, $\psi' \to \pi^0\pi^0$ and $\psi' \to J/\psi\,\eta$,"
Phys. Rev. D **62**, 032004 (2000).

11. C. Patrignani et al. (E835 Collaboration),
"E835 at FNAL: charmonium spectroscopy in $\bar{p}p$ annihilations,"
Nucl. Phys. A **692**, 308–314 (2001).

12. W. Baldini et al.,
"The new scintillating fiber detector of E835 at Fermilab,"
Nucl. Instrum. Methods A **461**, 219–221 (2001).

13. W. Baldini et al.,
"The new scintillating fiber detector of E835 at Fermilab,"
IEEE Trans. Nucl. Sci. **48**, 1122–1126 (2001).

14. M. Ambrogiani et al. (E835 Collaboration),
"Search for the η_c' (2^1S_0) charmonium resonance,"
Phys. Rev. D **64**, 052003 (2001).

15. M. Ambrogiani et al. (E835 Collaboration),
"Study of the angular distributions of the reactions $\bar{p}p \to \chi_{c1}, \chi_{c2} \to J/\psi\gamma \to e^+e^-\gamma$,"
Phys. Rev. D **65**, 052002 (2002).

16. S. Bagnasco et al. (E835 Collaboration),
"New measurements of the resonance parameters of the χ_{c0} (1^3P_0) state of charmonium,"
Phys. Lett. B **533**, 237–242 (2002).

17. M. Andreotti et al. (E835 Collaboration),
"Measurements of the magnetic form factor of the proton for timelike momentum transfers,"
Phys. Lett. B **559**, 20–25 (2003).

18. D. P. McGinnis, G. Stancari e S. J. Werkema,
"Beam decelerations with variable momentum compaction in the Fermilab Antiproton Accumulator,"
Nucl. Instrum. Methods A **506**, 205–216 (2003).

19. M. Ambrogiani et al. (E835 Collaboration),
"Measurement of the resonance parameters of the charmonium ground state, $\eta_c(1^1S_0)$,"
Phys. Lett. B **566**, 45–50 (2003).

20. M. Andreotti et al. (E835 Collaboration),
"Interference study of the $\chi_{c0}(1^3P_0)$ in the reaction $\bar{p}p \to \pi^0\pi^0$,"
Phys. Rev. Lett. **91**, 091801 (2003).

21. M. M. Obertino et al. (E835 Collaboration),
"Charmonium states at the Fermilab Antiproton Accumulator. New results from E835,"
Nucl. Phys. A **721**, 809–812 (2003).

22. S. N. Atutov et al.,
"Cooling and trapping of radioactive atoms: the Legnaro francium magneto-optical

trap,"
J. Opt. Soc. Am. B **20**, 953–959 (2003).

23. S. N. Atutov et al.,
"Trapping of radioactive atoms: the Legnaro francium magneto-optical trap,"
Phys. Scripta **T105**, 15–18 (2003).

24. S. N. Atutov et al.,
"The Legnaro francium magneto-optical trap,"
Hyperfine Interact. **146/147**, 83–89 (2003).

25. M. Andreotti et al. (E835 Collaboration),
"Measurement of the two photon decay of the χ_{c0} (1^3P_0) state of charmonium,"
Phys. Lett. B **584**, 16–21 (2004).

26. G. Garzoglio et al. (E835 Collaboration),
"Experiment E835 at Fermilab,"
Nucl. Instrum. Methods A **519**, 558–609 (2004).

27. S. N. Atutov et al.,
"Production and trapping of francium atoms,"
Nucl. Phys. A **746**, 421–424 (2004).

28. M. Andreotti et al. (E835 Collaboration),
"Measurement of the branching ratios $\psi' \to e^+e^-$, $\psi' \to J/\psi\,\pi\,\pi$, and $\psi' \to J/\psi\,\eta$,"
Phys. Rev. D **71**, 032006 (2005).

29. L. Corradi et al.,
"Excitation functions for $^{208-211}$Fr produced in the ^{18}O $+^{197}$ Au fusion reaction,"
Phys. Rev. C **71**, 014609 (2005).

30. S. N. Atutov et al.,
"Laser cooling and trapping of francium,"
Laser Phys. **15**, 1080–1086 (2005).

31. M. Andreotti et al. (E835 Collaboration),
"Measurement of the resonance parameters of the χ_{c1} (1^3P_1) and χ_{c2} (1^3P_2) states of charmonium formed in antiproton-proton annihilations,"
Nucl. Phys. B **717**, 34–47 (2005).

32. M. Ambrogiani et al. (E835 Collaboration),
"Measurement of the angular distribution in $\bar{p}p \to \psi(2S) \to e^+e^-$,"
Phys. Lett. B **610**, 177–182 (2005).

33. C. Patrignani et al. (E835 Collaboration),
"E835 at FNAL: charmonium spectroscopy in $\bar{p}p$ annihilations,"
Nucl. Phys. B (Proc. Suppl.) **142**, 98 (2005).

34. M. Andreotti et al. (E835 Collaboration),
"Results of a search for the $h_c(^1P_1)$ state of charmonium in the $\eta_c\,\gamma$ and $J/\psi\,\pi^0$ decay modes,"
Phys. Rev. D **72**, 032001 (2005).

35. M. Andreotti et al. (E835 Collaboration),
"A study of $\bar{p}p \to$ two neutral pseudoscalar mesons at the $\chi_{c0}(1^3P_0)$ formation energy,"
Phys. Rev. D **72**, 112002 (2005).

36. G. Stancari et al.,
"Production of radioactive beams of francium,"
Nucl. Instrum. Methods A **557**, 390 (2006).

37. G. Stancari et al.,
"Francium sources at LNL: design and performance,"
Rev. Sci. Instrum. **77**, 03A701 (2006).

38. M. Andreotti et al. (E835 Collaboration),
"Precision measurements of the total and partial widths of the $\psi(2S)$ charmonium meson with a new complementary-scan technique in antiproton-proton annihilations,"
Phys. Lett. B **654**, 74 (2007).

39. G. Stancari et al.,
"Francium sources and traps for fundamental interaction studies,"
Eur. Phys. J. ST **150**, 389 (2007).

40. G. Stancari, L. Corradi, and A. Dainelli,
"A beam transport line for magneto-optical trapping experiments with radioactive francium,"
Nucl. Instrum. Methods Phys. Res. A **594**, 321 (2008).

41. C. de Mauro et al.,
"Measurement of diffusion coefficients of francium and rubidium in yttrium based on laser spectroscopy,"
Phys. Rev. A **78**, 063415 (2008).

42. S. Sanguinetti et al.,
"Accurate measurements of transition frequencies and isotope shifts of laser-trapped francium,"
Opt. Lett. **34**, 893 (2009).

43. S. N. Atutov et al.,
"Experimental study of vapor-cell magneto-optical traps for efficient trapping of radioactive atoms,"
Eur. Phys. J. D **53**, 89 (2009).

44. D. Oellers et al.,
"Polarizing a stored proton beam by spin flip?"
Phys. Lett. B **674**, 269 (2009).

45. M. Bellei, P. Bussei, G. Stancari,
"Determinazione della carica specifica dell'elettrone per mezzo della deflessione magnetica dei raggi catodici,"
La Fisica nella Scuola **XLII**(2), 53 (2009).

46. V. Shiltsev, G. Stancari, and A. Valishev,
"Ambient betatron motion and its excitation by 'ghost lines' in Tevatron,"
FERMILAB-PUB-11-202-APC,
JINST **6**, P08002 (2011).

47. G. Stancari et al.,
"Collimation with hollow electron beams,"
FERMILAB-PUB-11-192-AD-APC, arXiv:1105.3256 [physics.acc-ph],
Phys. Rev. Lett. **107**, 084802 (2011).

48. N. Mokhov et al.,
"Tevatron beam halo collimation system: design, operational experience and new methods,"
FERMILAB-PUB-11-378-APC,
JINST **6**, T08005 (2011).

49. G. Stancari and A. Valishev,
"Bunch-by-bunch measurement of transverse coherent beam-beam modes in the Fermilab Tevatron collider,"
FERMILAB-PUB-11-181-APC, arXiv:1104.4366 [physics.acc-ph],
Phys. Rev. ST Accel. Beams **15**, 041002 (2012).

50. W. Erni et al. (PANDA Collaboration),
"Technical design report for the PANDA (Antiproton Annihilations at Darmstadt) Straw Tube Tracker,"
Eur. Phys. J. A **49**, 25 (2013).

51. G. Valentino et al.,
"Beam diffusion measurements using collimator scans in the LHC,"
FERMILAB-PUB-13-040-APC,
Phys. Rev. ST Accel. Beams **16**, 021003 (2013).

PAPERS PRESENTED AT CONFERENCES AND WORKSHOPS

52. M. Ambrogiani et al., "Results from the E835 cylindrical scintillating-fiber tracker," in *Proceedings of the Workshop on Scintillating Fiber Detectors (SCIFI97)*, Notre Dame, IN, November 1997, AIP Conf. Proc. **450**, 181–188 (1998).

53. G. Stancari (for the E835 collaboration), "Measurements of the magnetic form factor of the proton at large timelike momentum transfers," in *Proceedings of the II International Conference on Perspectives in Hadronic Physics*, ICTP Trieste, May 10–14, 1999 (World Scientific, 2000).

54. G. Stancari et al., "Production and transport of radioactive francium for magneto-optical trapping," in *Proceedings of the 9th European Particle Accelerator Conference (EPAC04)*, Lucerne, Switzerland, July 5–9, 2004, p. 1294.

55. G. Stancari, "Francium trapping at LNL," 4th Joint European HITRAP / ION-CATCHER / NIPNET Meeting, Munich, Germany, May 26–28, 2005.

56. G. Stancari, "Precision measurement of the $\psi(2S)$ width in antiproton-proton annihilations," International Workshop on Heavy Quarkonium, Brookhaven National Laboratory, Upton, NY, June 27–30, 2006.

57. P. Lenisa et al., "A low beta section for polarization studies of antiprotons by spin filtering," in *Proceedings of the 22nd Particle Accelerator Conference (PAC07)*, Albuquerque, NM, June 25–29, 2007, p. 1451.

58. G. Stancari, "A new complementary-scan technique for precise measurements of resonance parameters in antiproton-proton annihilations," in *Proceedings of the 22nd Particle Accelerator Conference (PAC07)*, Albuquerque, NM, June 25–29, 2007, p. 1448.

59. G. Stancari, "Positron program at the Idaho Accelerator Center," in *Proceedings of the International Workshop on Positrons at Jefferson Lab*, Newport News, VA, March 25–27, 2009, AIP Conf. Proc. **1160**, 115 (2009).

60. G. Stancari, A. Valishev, and A. Semenov, "Bunch-by-bunch detection of coherent transverse modes from digitized single-BPM signals in the Tevatron," in *Proceedings of the 14th Beam Instrumentation Workshop (BIW10)*, Santa Fe, NM, May 2–6, 2010, p. 363, FERMILAB-CONF-10-102-AD-APC.

61. G. Stancari et al., "Development of hollow electron beams for proton and ion collimation," in *Proceedings of the 1st International Particle Accelerator Conference (IPAC10)*, Kyoto, Japan, May 23–28, 2010, p. 1698, FERMILAB-CONF-10-182-AD-APC.

62. A. Valishev et al., "Progress with Tevatron electron lens head-on beam-beam compensation," in *Proceedings of the 1st International Particle Accelerator Conference (IPAC10)*, Kyoto, Japan, May 23–28, 2010, p. 2084, FERMILAB-CONF-10-137-AD-APC.

63. G. Stancari et al., "Hollow electron beam collimator: R&D status report," in *Proceedings of the 14th Advanced Accelerator Concepts Workshop (AAC10)*, Annapolis, MD, June 13–19, 2010, FERMILAB-CONF-10-196-APC, AIP Conf. Proc. **1299**, 638 (2010).

64. X. L. Zhang et al., "Operation of the Tevatron electron lenses," in *Proceedings of the 46th ICFA Advanced Beam Dynamics Workshop on High-Intensity and High-Brightness Hadron Beams (HB2010)*, Morschach, Switzerland, September 27 – October 1, 2010, p. 185, FERMILAB-CONF-10-399-AD.

65. A. Valishev and G. Stancari, "Results of head-on beam-beam compensation studies at the Tevatron," in *Proceedings of the 2011 Particle Accelerator Conference (PAC11)*, New York, NY, March 28 – April 1, 2011, MOODN1, FERMILAB-CONF-11-060-AD-APC.

66. G. Stancari et al., "Experimental study of magnetically confined hollow electron beams in the Tevatron as collimators for intense high-energy hadron beams," in *Proceedings of the 2011 Particle Accelerator Conference (PAC11)*, New York, NY, March 28 – April 1, 2011, MOP147, FERMILAB-CONF-11-058-AD-APC.

67. G. Stancari, "Collimation studies with hollow electron beams," in *Proceedings of the 2011 International Particle Accelerator Conference (IPAC11)*, San Sebastián, Spain, September 4–9, 2011, FERMILAB-CONF-11-412-AD-APC.

68. G. Stancari, "Measurements of transverse beam diffusion rates in the Tevatron collider," in *Proceedings of the 2011 International Particle Accelerator Conference (IPAC11)*, San Sebastián, Spain, September 4–9, 2011, FERMILAB-CONF-11-411-AD-APC.

69. G. Stancari, "New methods of particle collimation in colliders," in *Proceedings of the 2011 Meeting of the Division of Particles and Fields of the American Physical Society (APS/DPF 2011)*, Brown University, Providence, Rhode Island, August 9–13, 2011, arXiv:1110.0144 [physics.acc-ph], FERMILAB-CONF-11-506-AD-APC.

70. I. Morozov et al., "Simulation of Hollow Electron Beam Collimation in the Fermilab Tevatron Collider," in *Proceedings of the 2012 International Particle Accelerator Conference (IPAC12)*, New Orleans, Louisiana, USA, May 20–25, 2012, p. 94, FERMILAB-CONF-12-126-APC.

71. V. Previtali et al., "Numerical Simulations of Transverse Beam Diffusion Enhancement by the Use of Electron Lens in the Tevatron Collider," in *Proceedings of the 2012 International Particle Accelerator Conference (IPAC12)*, New Orleans, Louisiana, USA, May 20–25, 2012, p. 1113, FERMILAB-CONF-12-162-APC.

72. G. Stancari et al., "Beam halo dynamics and control with hollow electron beams," in *Proceedings of the 52nd ICFA Advanced Beam Dynamics Workshop on High-Intensity and High-Brightness Hadron Beams (HB2012)*, Beijing, China, September 17–21, 2012, arXiv:1209.5380 [physics.acc-ph], FERMILAB-CONF-12-506-AD-APC.

73. G. Stancari and A. Valishev, "Beam-beam compensation studies in the Tevatron with electron lenses," in *Proceedings of the ICFA Workshop on Beam-Beam Effects in Hadron Colliders (BB2013)*, Geneva, Switzerland, March 2013, FERMILAB-CONF-13-046-APC.

74. G. Stancari, A. Valishev, and S. M. White, "Detection of coherent beam-beam modes with digitized beam position monitor signals," in *Proceedings of the ICFA Workshop on Beam-Beam Effects in Hadron Colliders (BB2013)*, Geneva, Switzerland, March 2013, FERMILAB-CONF-13-053-APC.

75. G. Stancari et al., "Measurements of the effect of collisions on transverse beam halo diffusion in the Tevatron and in the LHC," in *Proceedings of the ICFA Workshop on Beam-Beam Effects in Hadron Colliders (BB2013)*, Geneva, Switzerland, March 2013, FERMILAB-CONF-13-054-APC.

76. V. Previtali, G. Stancari, A. Valishev, and S. Redaelli, "Hollow electron lens simulations for the SPS," in *Proceedings of the 2013 International Particle Accelerator Conference (IPAC13)*, Shanghai, China, May 2013, p. 990, FERMILAB-CONF-13-152-APC.

77. V. Previtali, G. Stancari, A. Valishev, and S. Redaelli, "Numerical simulations of a hollow electron lens as a scraping device for the LHC," in *Proceedings of the 2013 International Particle Accelerator Conference (IPAC13)*, Shanghai, China, May 2013, p. 993, FERMILAB-CONF-13-154-APC.

OTHER PUBLICATIONS

78. D. McGinnis, G. Stancari, and S. Werkema, "Guidelines for the Calculation of the Accumulator Magnet Bus Ramps for Fermilab Experiment E835," FERMILAB-PBAR-NOTE-611, April 15, 1999.

79. G. Garzoglio, K. E. Gollwitzer, and G. Stancari, "DSP algorithm for the closed orbit analysis of the signal from the Accumulator BPMs," FERMILAB-PBAR-NOTE-615, August 19, 1999.

80. G. Stancari, "Parameterization of hysteresis effects in Accumulator quadrupole magnets," FERMILAB-PBAR-NOTE-619, FERMILAB-TM-2094, October 1999.

81. S. N. Atutov et al., "Highly efficient magneto optical trapping of Rb atoms: preliminary tests toward a Fr MOT," LNL Annual Report 2000, p. 154 LNL-INFN(REP)-178/2001, ISBN 88-7337-000-4.

82. S. N. Atutov et al., "A new beam line for the production and transport of radioactive francium ions into a magneto-optical trap," LNL Annual Report 2001, p. 196, LNL-INFN(REP)-182/2002, ISBN 88-7337-002-0.

83. S. N. Atutov et al., "Production of francium ions for TRAPRAD," LNL Annual Report 2001, p. 198, LNL-INFN(REP)-182/2002, ISBN 88-7337-002-0.

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109. V. Previtali, G. Stancari, A. Valishev, and S. Redaelli, "Numerical simulations of a proposed hollow electron beam collimator for the LHC upgrade at CERN," FERMILAB-TM-2560-APC (July 2013).

INVITED TALKS

110. "Measurements of charmonium masses," Workshop on Quarkonium, CERN, November 8–10, 2002.

111. "Production and trapping of francium at LNL Legnaro," ISOLDE Workshop and Users Meeting, CERN, February 6–8, 2006.

112. "Production, transport and laser trapping of radioactive francium beams for the study of fundamental interactions," Accelerator Physics and Technology Seminar, Fermilab, Batavia, IL, January 15, 2008.

113. "Production, transport and laser trapping of radioactive francium beams for the study of fundamental interactions," Idaho State University, Pocatello, ID, June 6, 2008.

114. "The development of a prototype positron source for CEBAF as part of the ISU/JLab collaboration in accelerator physics and education," Center for Advanced Studies on Accelerators, Jefferson Lab, Newport News, VA, February 12, 2009.

115. "A positron source for CEBAF," CLAS12 European Workshop, Genoa, Italy, February 26, 2009.

116. "Positron program at the Idaho Accelerator Center," International Workshop on Positrons at Jefferson Lab, Newport News, VA, March 26, 2009.

117. "Experiments with antimatter: the physics of positrons and antiprotons," Idaho State University Colloquium, Pocatello, ID, April 27, 2009.

118. "Magnetically confined electron columns and high-energy hadron beams," Department of Physics, University of California San Diego, December 7, 2009.

119. "New methods of particle collimation in high-energy colliders," 2011 Meeting of the Division of Particles and Fields of the American Physical Society (APS/DPF 2011), Brown University, Providence, RI, August 9, 2011.

120. "Beam halo dynamics and control with hollow electron beams," 52nd ICFA Advanced Beam Dynamics Workshop on High-Intensity and High-Brightness Hadron Beams (HB2012), Beijing, China, September 17–21, 2012.

121. "Riflessioni sul ruolo della scienza e dello scienziato oggi," Incontri di fisica per docenti, studenti e cittadinanza, Carpi, Modena, Italy, October 12, 2012 (via Skype).

122. "Magnetically confined electron beams in accelerator physics," Institut für Angewandte Physik, Goethe Universität, Frankfurt am Main, Germany, November 2, 2012.

123. "Electron lens studies at the Tevatron," BNL APEX Workshop, Brookhaven National Laboratory, Upton, NY, November 20, 2012.